

MORTALITY AND THE CONTINUOUS WORK HISTORY SAMPLE

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This paper provides an overview of the plans and the work underway at the Social Security Administration (SSA) to develop and use SSA's major statistical files for mortality studies, specifically to construct mortality rates by certain demographic groups, such as age, race, and sex, and eventually by industry, occupation, and place of work or residence.

Organizationally, the paper is divided into several parts. The first of these provides a description of the Continuous Work History Sample (CWHS) and three administrative record systems that were selected for this particular study, examining each for their characteristics and extent of death reporting. After that is a discussion of the reporting of deaths to SSA based on our findings from a combination of the four individual sources chosen, with emphasis on fact and date of death by various demographic characteristics. This section also compares SSA deaths to the Vital Statistics deaths published annually by the National Center for Health Statistics (NCHS). [1] Then there is a report on the early results of our efforts to acquire death certificate information from state vital records offices and the National Center for Health Statistics. A brief mention of some of our plans for the future concludes the paper.

1. DESCRIPTION OF CWHS AND SSA'S ADMINISTRATIVE RECORD SYSTEMS

The Continuous Work History Sample.--The CWHS is a system of general multi-purpose statistical files designed primarily for socio-economic analyses [2]. The system consists of samples of records of individuals ever issued social security numbers. Earnings, employment, claims and benefit data for the individual are maintained in the CWHS system. The information in the CWHS is collected primarily as a by-product of the agency's administrative records processing.

Demographic information (date of birth, sex and race) is obtained from the person's application for a social security number. Employer characteristics (geographic location and industrial activity) are obtained from the employer's application for an identification number and other related forms that are used to update this information. Data on employment and earnings are derived from various reporting forms submitted by employers and self-employed persons. Claims and benefit information is obtained from applications and forms that are completed in the process of filing for and determining entitlement to benefits, and from various post-entitlement actions.

This particular project, as part of a large effort to enhance CWHS research possibilities, is directed toward using death certificate information to add items not previously available on the file. These items include cause of death, place of death, and occupation. In addition, it will improve death information on the CWHS files by combining death reports from several sources within SSA.

Our first step was to identify possible sources of death information within the agency.

We selected three reporting systems in addition to the CWHS which we felt would serve our needs. The three are the Master Beneficiary Record (MBR), the Summary Earnings Record (SER), and the NUMIDENT file.

Master Beneficiary Record.--The MBR file contains historical and current information required for the administration of Title II of the Social Security Act, dealing with the retirement, survivors and disability insurance benefits programs. In addition to having records in this file for persons entitled to benefits, there are now (introduced during the 1975-79 period) records for persons disallowed for retirement or survivors claims and those denied for claims made for disability benefits. Information in the MBR is obtained from the applications and forms that are used in the process of filing for and determining entitlement to benefits. Additional information may be added as a result of post-entitlement actions and from other SSA systems. The main purpose of the MBR is to furnish the necessary information to the Treasury Department for the issuance of monthly benefit checks. The maintenance of death information is an integral part of this file.

In addition to Title II claimants, there are also references in the MBR to recipients of other programs currently or formerly administered by the Social Security Administration (e.g. Supplemental Security Income, Black Lung and Medicare).

Summary Earnings Record.--The SER is the basic record in which lifetime earnings and quarters of coverage of the individual are recorded for use in determining entitlement to benefits and calculating benefit amounts at the time a claim for benefits is made. The major sources of information in the SER are the application for a social security number (date of birth, sex and race), reports of the amount of earnings subject to social security taxes filed by employers and self-employed persons, and feedback from the claims process, which includes death information.

NUMIDENT.--The NUMIDENT file contains virtually all of the information from the individual's application for a social security number (Form SS-5) or related forms. Because of the nature of the development of this file, it has more limited value as a source of death information than the other files used in this study.

The file was developed out of a need for more complete information to be used in the electronic screening process performed when a person applies for a social security number. This screening is done to insure that a number had not been previously issued to that person. There are two main sources of information in this file--(1) records created as part of the electronic issuance of social security numbers at SSA's central office which began in March 1972, and (2) records created as a result of converting the paper file of applications and related forms (SS-5 file) which existed prior to the initiation of electronic issuances.

It is only the converted SS-5 file that has information on death. This is because of the claims processing procedure used then. When a retirement, survivors or disability claim was filed, it was the practice to establish a claims folder. The original application form was pulled from the SS-5 file and put in the claims folder. A special form, identifying the type of claim, was substituted in the SS-5 file. Those claims for survivors benefits would have a date of death as part of the information on the special form. When the SS-5 file was converted for use in the NUMIDENT system, all of the information in the file was picked up, including that from the special forms.

Since the implementation of central office issuance of social security numbers, there was no need to establish the claims information in the SS-5 file. Therefore, the only cases for which death information is found are those with which a special form was on file at the time of conversion (1974-79).

There was no need to access other major systems such as those used for Medicare and the Supplemental Security Income programs because these systems have been integrated into the Master Beneficiary Record file and all pertinent death information is contained therein.

Both the Summary Earnings Record and the Master Beneficiary Record are key sources of information. Though, at present, the NUMIDENT file provides no direct input into the CWHS, the basic demographic information from the application for a social security number becomes the starting point for the establishment of a record in the SER and the subsequent inclusion in the CWHS. Future plans call for the augmentation of the CWHS with data from the NUMIDENT file.

Characteristics of the Source Files and Extent of Death Reporting.--Once a year, after the SER has been updated with virtually all of the earnings for the reference year, a 1-percent sample (based on specified digits of the social security number) is extracted. Certain updated information from claims processing, including death data, is also reflected in this extract. This file becomes the foundation for producing the 1-percent 1937-to-date CWHS file. It is used along with the prior year's CWHS and other files to generate the required data elements for the current year's CWHS. One of the other files is a 1-percent sample extract from the MBR. This extract contains current and historical claims and benefits data that is then inserted in or used to update information in the CWHS.

For this study, our next step was to prepare an extract from the selected source files for each known decedent who fell into our 1-percent sample. For the CWHS, the SER, and the NUMIDENT, the extract contained primarily demographic information along with the date of death which was used as a selection factor. For the MBR, substantial additional claims and benefits data were included in the extract along with the demographic data for each primary or secondary beneficiary decedent who fell into the 1-percent sample.

At this point, we had an extract from the CWHS of 336,348 decedents (13% of the source file), an extract from the MBR of 191,976 (25%

of the estimated 1% cases), an extract from the SER of 292,726 (11% of the estimated sample), and an extract from the NUMIDENT of 121,189 (5% of the estimated sample). Figure 1 summarizes this information, presenting the total size of the record systems accessed and the decedent rates from the estimated 1% cases. Total decedents, of course, cannot be obtained from summing the extracted records since many individuals are included in two or more record systems.

Figure 1.--SSA Record System Size and Decedent Rates Within Estimated 1% Sample

System	Total Size (in millions)	Decedent Rate for Estimated 1% Cases
CWHS (1%)	2.58	13
SER (100%)	257.96	11
MBR (100%)	76.53	25
NUMIDENT (100%)	266.00	5

Throughout this paper, we classify race and sex as white male, white female, other male, and other female. There are, of course, records in each system where race or sex or both are unknown or at least not stated. As shown in Figure 2, the problem is not significant except in the case of the NUMIDENT extract which does not contain a race code at all. If the NUMIDENT record has been an SS-5 type (Application for a Social Security Number), then a race code would have been available; however, death reports on the NUMIDENT neglect to include race code. For this paper, we have treated unknown sex as male. In order to be consistent with the National Center for Health Statistics, we have treated unknown race as white if death occurred prior to 1964. Deaths occurring in 1964 and later years have been treated according to the previous record on the file with a known race.

In no instance was age at death available on the source files. Attained age in year of death was calculated where both year of birth and year of death were known. If either year was not stated, we included the record in an "unknown" category.

Figure 2.--Extent of Unknown Race, Sex and Age Attained at Death Within the Systems

System	% Without race	% Without sex	% Without age
CWHS	4.34	0.00	1.76
SER	3.39	0.00	0.03
MBR	3.47	0.02	0.19
NUMIDENT	100.00	0.00	8.61
Merged Data (edited)	2.28	0.00	15.08

Changes in Coverage.--Death coding in the files has been heavily impacted by new programs and changes in the existing programs as well as other large administrative housekeeping activities. In order to examine the files historically, a quick review of SSA program history which could affect the demographic makeup of the system might be useful [3].

The Social Security Act, signed into law on August 14, 1935, established two social insurance programs on a national scale aimed at old-age and unemployment. These were a Federal sys-

tem of old-age benefits for retired workers who had been employed in industry and commerce and a Federal-State system of unemployment insurance. In 1939, Congress made the old-age insurance program a family program rather than a program for retired workers only, by providing monthly benefits for workers' dependents and survivors. In 1950, the program was broadened to cover many jobs that had been previously excluded. Among these groups were regularly employed farm and household employees and self-employed persons--other than farmers and professional people. In the 1950's, farm operators and most self-employed professionals, members of armed forces and some state and local employees were added. In 1956, the retirement eligibility age for women was lowered from age 65 to 62. In the same year, the scope of Social Security was significantly broadened through the addition of disability insurance. Benefits were provided for severely disabled workers aged 50-64 and for adult disabled children (if disabled before age 18) of deceased and retired workers. In 1958, the Act was further amended to provide benefits for dependents of disabled workers similar to those already provided for dependents of retired workers. In 1960, the age 50 limitation for disability benefits was removed so that benefits could be paid at any age before 65. In 1961, the retirement eligibility age for men was lowered to 62. In 1965, amendments modified the definition of disability so that a severely disabled person could qualify if his impairment could be expected to last 12 months. Self-employed physicians joined the covered groups. The eligibility age for widows dropped from 62 to 60. Amendments eased eligibility requirements for people 72 and older who were not eligible for benefits by introducing a transitional insured status under which a special flat monthly benefit could be paid to persons with three to five quarters of coverage. And the biggest impact of all occurred with the introduction of Medicare for persons 65 and older. In 1966, an amendment extended special benefits to certain people 72 and older who could not meet the minimal requirements established the previous year of three to five quarters of coverage. In 1972, the age of disability limitation for disabled children was raised from 18 to 22. The eligibility age for retirement benefits for widowers was dropped from 62 to 60. Worker's benefits were ordered to increase if retirement was delayed beyond age 65. The same year, Medicare was extended to disability beneficiaries of any age under certain circumstances and to most persons with chronic kidney disease. In early 1977, lump sum only payments became a part of the MBR, but recording was considered very incomplete until about the end of 1979. The original purpose of the lump sum was to pay back contributions when no monthly benefits were payable.

2. HISTORICAL EXAMINATION OF DEATH REPORTING, 1950-1977

Death Reporting by Age, Race, and Sex, 1950-1977.--Before moving too much further along with the development of our data base, we felt we should examine each source historically by age, race, and sex characteristics. We were curious to know what we would have found had we re-

stricted our search for mortality information and our effort to upgrade that data to a single source or recordkeeping system. In order to examine each record system in some sort of detail, particularly with respect to age of decedent, we are concentrating for the moment on five years--1950, 1960, 1965, 1970, and 1977--to allow us to look at widely spread intervals of time and at the most current year of "completely" updated records. These selected years, however, cannot yield a total portrait of SSA's capturing of death information.

Looking first at the CWHS, we find that, as would be expected, nearly all the decedents in the early years were male--especially white male. Over the 28-year period, the population of decedents in the file shifted from 84% male in 1950 to 65% male in 1977. The most significant change in the male-female makeup of the file occurred in the 1960's when the proportion of women showed an increase of 38%, rising from 21% of the recorded deaths to 34% in that decade. The proportion of women rose in the 28-year period from a mere 15% to a still small 35%. The race characteristics of this population remained consistent, with whites experiencing 88.81% of the deaths reported in the CWHS in 1950 and 87.61% in 1977. The age concentration rose from the 45-69 age group with a peak in the 60-64 age group in 1950 to a concentration of ages in 1977 in the group of 65-89 with a peak at 80-84.

Turning to the SER, we find the population even more heavily male in 1950 with 92% male as opposed to 84% in the CWHS. However, the male-female proportion in the SER showed a much more significant shift over the 27-year period than was seen in the CWHS, with the male population dropping to 57% as opposed to 65% in the CWHS. The proportion of women in this file grew steadily from decade to decade rather than having an increase which was concentrated in the 1960's as was noticed in the CWHS. In addition to showing the largest change in sex, this source also showed the largest change in race with a 93.55% white population in 1950 as opposed to 88.91% in 1977. Age characteristics tend to follow the same general pattern as in the CWHS except that the SER population was considerably older in 1950 with a concentration in the 65-79 age group as opposed to the 45-69 age group in the CWHS.

The MBR, which did not come into existence in its present electronic format until 1962, has a shorter span of history with which we are concerned. Therefore, we looked in some detail at deaths occurring in 1965, 1970, and 1977. This MBR extract, like the others, consists of a heavy proportion of males in its early years with 81% of its content classified as male in 1965. However, it was split 50-50 by 1977. The race proportion in this source changed only slightly with 92.63% white in 1965 and 91.20% in 1977. As for age patterns, this system has shown almost no change, with a consistent concentration in the 65-89 age group.

The death reporting in the NUMIDENT has changed little in its history. The male proportion of the file has shifted but the shift--from 99% in 1950, to 98% in 1960, to 68% in 1970, and

back up to 75% in 1977--appears to have no significance as far as historical perspectives. The concentration of ages has remained in the 45-64 category throughout the 28-year period.

Comparing SSA Deaths to Vital Statistics

Figures.--Our next question concerning changes in coverage led us to an examination of reporting in each source relative to death figures published annually in the Vital Statistics of the United States.

In 1950, reporting of deaths to SSA was poor. Of the 1-1/2 million deaths occurring in 1950, only 19.88% are reported in the CWHS, 11.76% in the SER, and 18.14% in the NUMIDENT. Reporting in all systems was highest for the male sex. The white race showed better reporting than other races although race, on the whole, seems to have much less significance than sex. The median age at death reported in the SER appears to be more in line with the Vital Statistics reports. All SSA systems are younger, but the SER age is only slightly younger than reported in the Vital Statistics.

Ten years later, in 1960, extent of reporting showed considerable improvement with percentage of deaths reported amounting to 51.71%, 53.69%, and 20.82% for the CWHS, the SER, and the NUMIDENT, respectively. The greatest improvement occurred in the SER, bringing it from the status of poorest source of death information in 1950 to the best source in 1960. Reporting rose significantly for all groups. Median age at death fell more in line with the Vital Statistics reports than had occurred the previous decade.

By 1965, the MBR had been in existence about three years and was already receiving reports of 36.51% of male deaths and 16.07% of female deaths. The CWHS regained its position as best single SSA source of death reporting--probably via the MBR.

Five years later, in 1970, only eight years after the MBR began, 78.40% of the total deaths were reported in the CWHS. Reporting of deaths to the MBR had risen significantly for women with 47.87% of female deaths reported.

By 1977, the latest year of this study, death reporting on the CWHS had declined slightly with only 74.01% of total deaths reported. Our best single source of deaths for the total population is the SER; for males--the CWHS; and for females--the MBR.

Merging of Sources and Effect on Death Reporting.--After becoming reasonably familiar with the data from each source, we began the process of matching and merging the sources to create a single record for each decedent. Our resulting merged data base now consisted of 389,479 decedents. For the years 1957 through 1977, which we will concentrate most heavily upon in this section because of our interest in industrial mortality, our data base consisted of 290,831 decedents. We obtained four-way matches for 878 individuals who died during the period from 1957 through 1977 giving us data from all of our SSA sources, but representing only 0.30% of the decedents in that 21-year period. However, records having three sources of data accounted for 64.38% of the deaths in the 21-year period. The source most often absent in three-way matches was the NUMIDENT. Records having two sources of data

accounted for 25.84% of deaths, with the NUMIDENT and MBR most often absent. It is important to keep in mind that the MBR did not come into existence until 1962 which may account for the large number of decedents with no MBR data. On the other hand, whenever data was available from only a single source, which accounted for 9.48%, that source was usually the MBR. Considering the more recent changes in coverage and the structure of the CWHS which includes a deceased beneficiary only if the primary is in the sample, it was expected that this would be the case.

In creating the initial extracts, there were numerous ways to identify decedents. This meant there could be instances where there was not a date of the death. It was hoped that by merging the sources we would locate month and year of death.

Date information was available in all four files in only 778 cases or 0.27% of deaths reported in the 21-year period. Cases providing three sources of date information accounted for 64.22% of the merged file. In most of these cases (49.24%), the NUMIDENT was the source failing to yield date information; in 14.82% it was the MBR. Cases providing two sources of date information accounted for 25.92% of the file with most of these pieces of data coming from the CWHS and SER (12.95%) and from the CWHS and NUMIDENT (8.03%). Cases with only one source accounted for 9.59% of the file with 2.40% having only a CWHS record, 1.45% with only an SER record, 3.89% with MBR and 1.85% with NUMIDENT. For deaths in the 21-year period, we were able to locate date information for all records in the merged dataset.

Demographic Characteristics of Death Reporting in the Combined Dataset.--After examining each source individually by age, race, and sex characteristics, we wanted to see the result of combining the datasets. In the earlier years, the combined dataset closely resembles the age, race, and sex characteristics of the CWHS. By 1977, females represented a greater proportion of the combined file than of the CWHS, SER, and NUMIDENT but a lesser proportion than on the MBR. Race and age were similar to the CWHS and SER. Figure 3 summarizes the age, race and sex characteristics of the combined dataset for five selected years.

Figure 3.--Proportional Age, Sex, and Race Characteristics of the Combined Dataset for Selected Years

Characteristic	1950	1960	1965	1970	1977
<u>Percentage Distribution</u>					
Sex:					
Male.....	84.61	78.97	74.93	65.63	55.40
Female.....	15.36	21.01	25.04	34.34	44.58
Race:					
White.....	89.18	89.47	89.32	87.22	87.53
Other.....	10.79	10.51	10.65	12.75	12.45
<u>Age Category</u>					
Age:					
Most					
Frequent....	60-64	70-74	75-79	75-79	80-84

Extent of Death Reporting in the Combined Dataset.--The final test of the payoff of our effort to combine death reports from the various files is illustrated in Figure 4. We first examined the extent of reporting on the CWHS itself, then the extent of additional deaths from the merging of data from the SER, then from merging of MBR data to the already combined CWHS-SER reporting, and finally from merging the NUMIDENT to the combined CWHS-SER-MBR reporting.

Reporting on the CWHS rose rapidly until hitting a peak in 1971 when it began a gradual decline to 74.01% of the deaths in 1977. However, by adding other death reports from the SER, the extent of reporting rises to 93.68% in 1977. Additional 1977 deaths from the MBR brought SSA reporting to 98.15% and the NUMIDENT brought it to 98.47%.

The combined dataset provides SSA with virtually complete death reporting in the more recent years for white male decedents and for decedents aged 65 and over. Lowest extent of reporting is for decedents under 65 years of age and for female decedents of black or other races; where respectively 81.99% and 93.89% of total deaths were reported. Figure 5 illustrates extent of reporting by race and sex. Figure 6 illustrates extent of reporting by age.

3. OBTAINING DEATH CERTIFICATE INFORMATION

While the basic sample consisting of all known 1% sample decedents was being created and edited, work was also progressing on a second sample. This second sample consists only of

1975 decedents. For these individuals, we extracted all the data which was already available to us from the described SSA sources and we began the process of obtaining additional data from two external sources--each decedent's death certificate from the vital records office in their state of residence and the death record from NCHS's detailed mortality file. From the death certificate, we will obtain place of death, occupation and industry. From the NCHS mortality files, we will obtain other information such as cause of death coded according to the classifications set forth by the World Health Organization and adapted for use in the United States.

Creation of Study Sample.--The initial sample was approximately 14,000 decedents with SSA benefit records on the MBR. There were 18,368 deaths occurring in 1975 that were recorded in SSA systems for the 1% sample; however, we confined our search for death certificates to the 14,000 deaths recorded in the MBR for 1975 because this was the easiest approach considering our resources.

To the initial sample we added a ringer sample of approximately 1,200 from the pilot subsample portion of another SSA study--the 1975 Mortality Coverage and Content Study [4]--to serve as a test of the searching procedures of the states when death certificate number is not available. The ringer sample consisted of individuals in the Coverage and Content Study for whom a death certificate had been found and

Figure 4.--Number of Decedents by SSA Data Sources and Year of Death

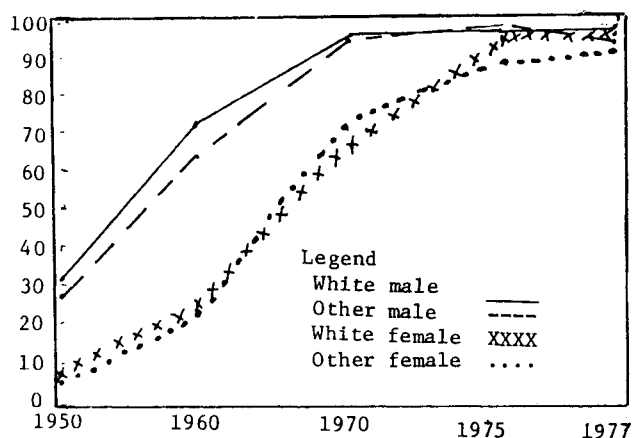
Year of Death	Number of Decedents (in thousands)						Percent Distribution					
	NCHS	SSA Sources					NCHS	SSA Sources				
		Total	CWHS	Additional From				Total	CWHS	Additional From		
			SER 1/	MBR 2/	NUMIDENT 3/			SER 1/	MBR 2/	NUMIDENT 3/		
1950	1,452	299	289	0.1	-	10.5	100.00	20.61	19.88	0.01	-	0.72
1957	1,633	776	766	1.3	-	8.8	100.00	47.50	46.89	0.08	-	0.54
1958	1,648	830	823	1.0	-	6.2	100.00	50.39	49.95	0.06	-	0.38
1959	1,657	865	852	1.9	-	10.8	100.00	52.18	51.42	0.11	-	0.65
1960	1,712	903	885	2.0	-	15.3	100.00	52.72	51.71	0.12	-	0.89
1961	1,702	952	931	3.0	-	17.8	100.00	55.96	54.74	0.18	-	1.05
1962	1,757	1,018	998	1.9	-	18.0	100.00	57.92	56.79	0.11	-	1.02
1963	1,814	1,111	1,088	0.5	0.1	22.9	100.00	61.27	59.97	0.03	0.01	1.26
1964	1,798	1,130	1,107	1.4	0.4	21.6	100.00	62.86	61.56	0.08	0.02	1.20
1965	1,828	1,212	1,183	2.6	1.7	24.1	100.00	66.29	64.73	0.14	0.09	1.32
1966	1,863	1,393	1,287	5.9	68.0	31.5	100.00	74.74	69.09	0.32	3.65	1.69
1967	1,851	1,390	1,318	6.2	26.7	39.2	100.00	75.07	71.17	0.33	1.44	2.12
1968	1,930	1,595	1,533	9.1	3.5	49.0	100.00	82.61	79.42	0.47	0.18	2.54
1969	1,922	1,557	1,485	11.0	24.0	36.8	100.00	80.98	77.25	0.57	1.25	1.91
1970	1,921	1,613	1,506	10.3	42.8	53.9	100.00	83.97	78.40	0.54	2.23	2.81
1971	1,928	1,629	1,525	15.5	51.0	38.0	100.00	84.53	79.11	0.80	2.65	1.97
1972	1,964	1,758	1,545	28.7	160.5	23.5	100.00	89.49	78.66	1.46	8.17	1.20
1973	1,973	1,878	1,532	55.9	255.1	34.6	100.00	95.18	77.66	2.83	12.93	1.75
1974	1,934	1,852	1,504	80.3	238.7	28.2	100.00	95.72	77.77	4.15	12.34	1.46
1975	1,893	1,837	1,455	255.3	101.6	24.7	100.00	97.04	76.88	13.49	5.37	1.30
1976	1,909	1,904	1,467	336.6	82.2	17.9	100.00	99.70	76.83	17.63	4.30	0.94
1977	1,900	1,871	1,406	373.6	85.0	6.2	100.00	98.47	74.01	19.67	4.47	0.33

1/ Deaths reported in the SER, not in the CWHS.

2/ Deaths reported in the MBR, not in the CWHS or SER.

3/ Deaths reported in the NUMIDENT, not in the CWHS, SER, or MBR.

Figure 5.--Reporting of Death by Race-Sex

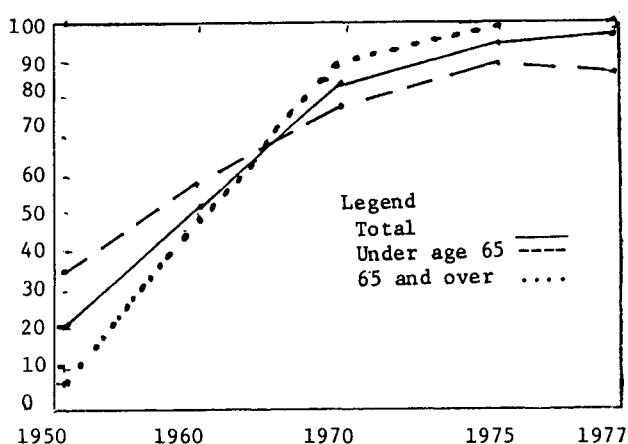


successfully matched to SSA's Summary Earnings Records. A successful match indicated that the death certificate had the correct social security number and that the name, sex, race, month of birth, and year of birth (with a five-year tolerance) generally were in agreement with SSA's records. For the search, we selected data from the beneficiary data of the ringer sample.

The sample, now consisting of 15,487 records, was then separated by state of residence of beneficiary and two listings were prepared for each state. Each listing contained month and year of birth, and social security number. One listing was sequenced by date of death and one alphabetically by last name. These were mailed to the respective states in January of 1980. To date, the response has been extremely good. We are considering taking further steps to locate death certificates for those decedents for whom no record was returned from the state; and we may decide to contact states contiguous to the decedent's state of residence in the hope of locating the death record there. Also, we may extend our search to the remaining 4,000 deaths identified in our system. This is tentative due to the current level of resources and budget cuts. Regardless of our decision concerning further searching, much work remains to be done. Those death certificates we have received thus far will be edited and matched to their respective SSA earnings, benefit, CWHS, and NUMIDENT data. Match codes will be constructed to indicate the usefulness of the linkage, and apparent mismatches will be identified. We will look at estimates of the number and nature of CWHS and ringer deaths for which certificates could not be located. Assuming all states grant permission, NCHS will turn over detailed cause of death and other statistically coded data for the decedents on the matched death certificate-SSA file.

Future Plans.--By 1982, we expect to create a restricted-use file consisting of social security information, death certificate data coded for this study and the standard NCHS statistical record. It is our hope that this data will benefit researchers interested in using the CWHS oc-

Figure 6.--Reporting of Death by Age



cupation. For persons interested in SSA industry information, it will augment currently available employer data with information on occupation, until now not present on the CWHS.

Broader, long-range plans call for the eventual linking of information from the CWHS with mortality data from NCHS and income tax information from IRS including occupation and residence. [5]

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Notes and References

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- [2] For more detailed information on the CWHS refer to the paper "The Continuous Work History Sample: Description and Contents" by Warren Buckler and Creston Smith, Social Security Administration, prepared for distribution at the 1980 Joint Statistical Meetings, American Statistical Association.
- [3] More complete historical data can be found in U.S. Department of Health, Education, and Welfare, Social Security Administration. Social Security Programs in the United States. Washington, D.C.: Government Printing Office, January 1973.
- [4] Alvey, W. and Aziz, F., "Mortality Reporting in SSA Linked Data: Preliminary Results," Social Security Bulletin, Vol. 42, No. 11, November 1979.
- [5] For a more complete look at future plans see "Goals and Plans for a Linked Administrative Statistical Sample" by Beth Kilss and Fritz Scheuren, Internal Revenue Service and Warren Buckler, Social Security Administration, prepared for presentation at the 1980 Joint Statistical Meetings, American Statistical Association.